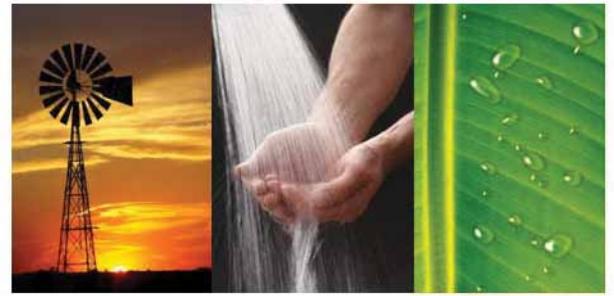


# North Plains Water News



A Publication of the NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT

VOLUME 57, NO. 2 "Maintaining our way of life through conservation, protection, and preservation of our groundwater resources."

Summer 2011

## Drought 2010-2011: Everyone Is Feeling the Heat

It's no newsflash to anyone reading this article. It has been hot, dry and windy for a long time. From fall of 2010 until early August was the driest stretch since at least 1895, when rainfall statistics were first officially recorded. And it's also fairly obvious the drought has stretched groundwater resources for farmers, cities, industry and individuals. Everyone is feeling the heat.

Because of its direct impact on



Courtesy Texas AgriLife

their bottom line, no one group is more dependent on the rain than farmers. With almost no measureable rainfall across much of the district, some producers are finding they don't have enough wells or well capacity to water the acres they've planted. Public water supplies are up against similar challenges in trying to meet the demands of residential and industrial users.

District board member and member of the Texas Corn Producers board, Wesley Spurlock said total corn production will be down by at least half this year, in the district. "Grain elevators in the area are predicting a 50-percent decrease in corn production this year because of reduced yields and lost acres," said Spurlock. Corn growers are cutting some fields early for silage because the fields have been so severely damaged, while other fields are being abandoned completely. The strategy is to reduce overall losses by diverting water from less promising fields to fields that are more likely to make a return.

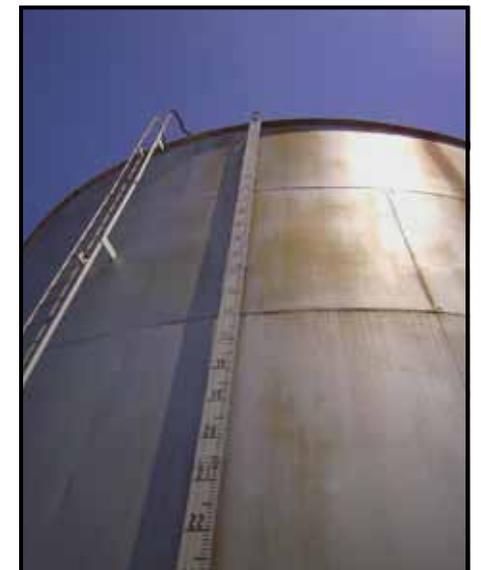
"During a normal summer we would have occasional peaks of 5-million gallons per day in demand, with an average of about 3.5-million for the summer," said Perryton City Manager, David Landis. "This year we're seeing 5-million gallons used day-in and day-out." This full-capacity

operation is causing problems with mechanical breakdowns of equipment adding to the struggle to keep-up. The drought is also causing problems for the systems that most people wouldn't think about. "Cracks in the ground translate to cracks in underground water lines," Landis said. "We even had a specialized, concrete-reinforced water line crack, at a repair cost of \$70,000."

The district's rules limit pumping to 21-inches of water per acre of owned water rights in 2011. Some cities within the district are looking to buy more acres of water rights to make sure they can meet demands now and in the future, while complying with the district's production limitations. Farmers normally need an average of 28-30 inches of water per acre to produce a corn crop, so with no rainfall to supplement the plants' water needs, there would appear to be a shortfall for irrigators. However, the district rules include a provision that allows all producers of water within the district to bank unused allocation from one year, and use up to 6-inches of saved water in each of the next two years.

The provision is called the Water Conservation Reserve (WCR) program and was designed to further conservation goals, while allowing some relief for producers in dry years like this one. The program started last year in 2010, and

based on the 2010 Production Report, 93-percent of all producers saved at least 6-inches of allocated water that can be used in 2011. That brings the allowable production level for those producers up



When municipal wells can't keep up with the demand cities start using stored supplies from tanks like this one in Dumas that holds 500,000 gallons.

to 27-inches per acre for every acre of water rights they own.

As an example, one district board member and long-time corn farmer said the WCR should help people make a crop and stay in compliance with

(continued on page 2)

## TCEQ Gains New Authority Over PGMA's

For a year in which groundwater was not to be a major legislative issue, the 82nd Legislature found a way to make some pretty profound changes to groundwater management. Brief summaries of new legislation are as follows:

SB 332 - Groundwater ownership was affirmed by the Legislature, but groundwater conservation districts retain the authority to manage the resource. Based on the district's current management philosophy, the amendment to groundwater ownership will not affect the district's management planning or rulemaking.

SB 313 - This legislation allows the Texas Commission on Environmental Quality to simply create a district for a Priority Groundwater Management Area (PGMA) or assign an area that is in a PGMA to an existing district. A PGMA is a geographic region that has been designated by the TCEQ as expected to, or experiencing, critical groundwater problems, including declines. A vote would be required to determine if the residents in the PGMA would pay taxes to support the district operation. If the vote should fail, the district would set fees for the area to cover the cost of operations.

SB 660 - The method for adoption of a Desired Future Condition (DFC) and the method of management under a selected DFC was modified. The legislation allows for more transparent notice and justification of the reason for the selection of the DFC. It also provides for clarification of the long term management practices proposed to achieve the DFC.

SB 737 - After September 1, 2011, "Managed Available Groundwater" will become "Modeled Available Groundwater" to more accurately reflect the nature of the information provided

to the districts by the Texas Water Development Board.

SB 693 - Permit applicants or affected parties can now request a hearing before the State Office of Administrative Hearing (SOAH) for a permit matter. The district board would receive a proposed action by an administrative law judge, but the board would have the final authority in the matter.

SB 727 - The executive administrator of the Texas Water Development Board no longer certifies management plans, but now approves management plans.

## District Joins with Cities to Present "Operation: Summer Showers"

The long months of no rain, high winds and high heat have caused water demand to peak and municipalities' supplies to plummet. Two of the biggest users of water in the summertime have to do with showers. "The lack of showers outdoors results in an increase in lawn watering, while showering and other uses indoors account for most of the domestic water use year-round," said Kirk Welch, North Plains Groundwater Conservation District, public information and conservation education manager.

To help the residents of the North Plains Groundwater Conservation District save as much water as possible, the district, in cooperation with several cities and media outlets, presented "Operation: Summer Showers". "Operation: Summer Showers" is designed to raise awareness about the importance of conservation through public service announcements on the radio and in the newspaper, combined with the distribution of free water-saving tools.

"Operation: Summer Showers takes direct aim at some of the biggest users of water during this critical time of the year," said Welch. "We citizens are really on the front lines of this effort, and the campaign gives us tools and mobilizes us all to do our part."

Low-flow showerheads and rain/sprinkler gauges were distributed along with tips on how you can take good care of your lawn while not wasting water.

The free water-saving tools

are available while supplies last at the North Plains Groundwater Conservation District Office at 603 E 1st Street in Dumas and at City Hall in Booker, Spearman, Stinnett, Stratford, Dumas, Dalhart and Perryton. For more information on "Operation: Summer Showers" call the district office at 806-935-6401, email [welch@npwd.org](mailto:welch@npwd.org), or log onto [www.npwd.org](http://www.npwd.org).



## District Water Quality Testing



The North Plains Groundwater Conservation District monitors Ogallala water quality by collecting and analyzing samples from over 250 wells within the district. It is the goal of the district to ensure as much as possible that future supplies of water are adequate, as well as of good quality.

The district also performs water quality analysis of samples at the request of local landowners and prior to many land sales for banking and real estate concerns. Most analyses are free to district residents.

The district offers water quality tests for calcium, magnesium and total hardness, chloride, conductivity, fluoride, iron, nitrates, pH, sodium, sulfate, total dissolved solids, and presence/absence of coli-form bacteria.

## Everyone Is Feeling the Heat

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district rules. "Since the allocation is for total acres owned, a producer can use the allocation for non-irrigated land and apply it to his irrigated portion," said Danny Krienke. "That means if a person only irrigates 500 acres of a 640 acre section then he has an additional 140 acres of allocation to apply to the acres under the pivot." In this scenario that would give the irrigator an effective allocation of 34.5-inches under the pivot.

The allowable production level will drop to 18-inches in 2012, and everyone will be hoping for rainfall amounts to return to something closer to historical averages. However, because of the WCR 63-percent of all producers will have an extra 6-inches to add to their allowable annual production. That's the percentage of producers who saved at least a foot from their 2010 allocation. "It also likely that some producers will have reserve allocation from this year if they should need it for next year," said district general manager, Steve Walthour. The board has not proposed further reductions in allowable production levels; however

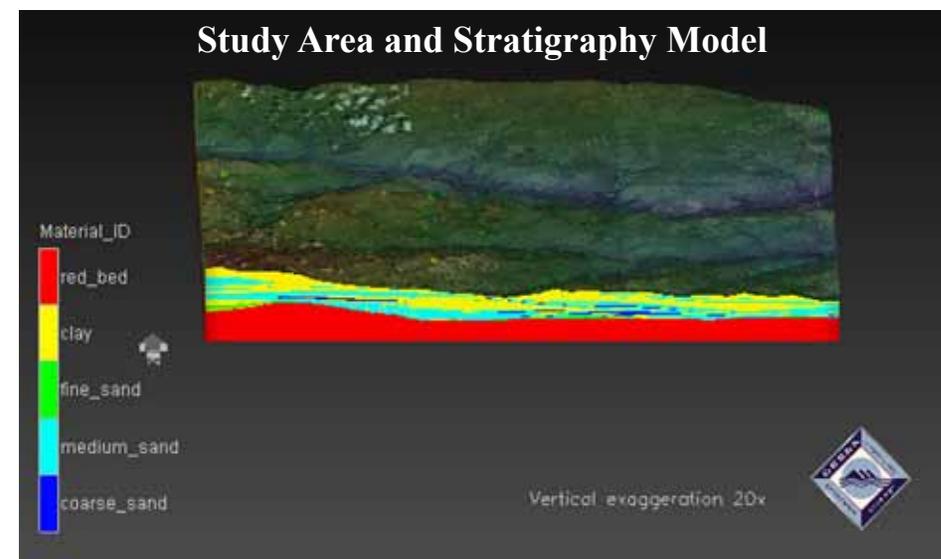
## District Takes a 3-D Look at the Ogallala

The district has contracted with an environmental engineering firm to create a three dimensional model of the Ogallala aquifer under Lipscomb County. The model will be one of the products of an in-depth study of the stratigraphy of the area. Stratigraphy is the study of rock strata, especially the distribution, deposition, and age of sedimentary rocks. "The purpose of the study is to increase the accuracy of existing information and incorporate new information about the Ogallala aquifer that is not currently available to the district," said Dale Hallmark, district hydrologist and project manager.

The study will provide more detail about the aquifer's hydrologic properties, and will explore the quantity of groundwater and the potential longevity of the resource. The Lipscomb

study may serve as a model for future studies in other counties within the district," said Steve Walthour, general manager.

The study will enhance the district's saturated material maps, depth to water maps, and red-bed (base of the aquifer) maps, in addition to providing the 3-D model of the aquifer of that area. The 3-D model will be extremely valuable for exploring possible future conditions of the aquifer. It will also provide a dynamic visual aid for effectively communicating complicated issues to students, stakeholders and legislators. Ultimately, the study will provide the board of directors with more accurate information and additional tools for managing groundwater in the area.



Above is a 3-D stratigraphic model of the aquifer in Hemphill County. Reproduced courtesy Hemphill County Underground Water Conservation District.

they are reviewing the rules regarding well spacing.

The district board of directors believes that rules should be fairly and equally applied to everyone in the district. That's why all producers of water in the district are subject to the same allowable production levels, whether they are farmers, businesses or city water systems.

But just like water, the circumstances that affect groundwater, and therefore our way of life, are fluid-ever changing. For example, while this season has seen some of the driest conditions in recorded history, it has also been a time of unprecedented drilling of new wells and irrigation of previously undeveloped land. These kinds of dynamics make it necessary for the district to frequently re-evaluate rules and policies to make sure they are still effective, relevant and fair to every stakeholder.

"That's why it is critically important for stakeholders to stay plugged-in to their groundwater conservation district," said Walthour. "It is through your feedback and involvement that the board can have the information they need to make the right decisions for the future of groundwater in the district."

## Water Saving Lawn Watering Tips



- ◆ Don't water things that don't grow, like streets and sidewalks.
- ◆ Water early or late in the day when there is less heat to cause evaporation.
- ◆ Water when there is as little wind as possible to keep the water on your lawn.
- ◆ Water your lawn when it needs it, not on a timer. Use a rain gauge or tuna can to know when you've applied no more than one inch of water per week.
- ◆ Allow grass to dry between watering to promote deeper root growth.
- ◆ Cut your lawn to 2 ½ - 3 inches. Taller grass shades the soil, reducing evaporation.

## Annexing Lands into the District

Over the past year, 3,500 acres of land has been added to the district as a result of private landowners filing direct petitions to the board of directors. The process is explained in detail in Subchapter J. of Chapter 36 of the Texas Water Code. It is to the benefit of landowners because the annexed land will be subject to the spacing, prevention of waste, and groundwater quality rules of the district. As a result the land will be protected from drainage of water, an undue increase in the drawdown of the water table, and pollution. It benefits the district because the land is

contiguous to the district and currently unregulated. Once the territory is added to the district it will be subject to all the same rules as all other district territory, enhancing the district's ability to manage the resource. Lands to be added to the district must be contiguous to the district, or within the same groundwater management area, priority groundwater management area, or groundwater subdivision designated by the Texas Commission on Environmental Quality. For more information about adding lands to the district call the office at 806-935-6401.

## District Adds Natural Resource Specialist



Laura West is the newest addition to the Science and Technology staff of the district. West joined the district as a natural resource specialist in June. She is a 2009 graduate of Texas A&M University and a 2005 graduate of Dumas High School. In her position with the district, West will focus on compliance matters, spending a majority of her time performing a

variety of field inspections of wells and well sites. "As drilling activity increased in some parts of the district, the board saw the need for a stronger presence in the field," said Steve Walthour, general manager. "We were fortunate to find someone with Laura's qualifications to fill the need," Walthour said. West is the daughter of Dan West, DDS and Angie West of Dumas.

## District Helps Residents Catch the Rain

Some North Plains residents are ready to make better use of the rain when it comes. Participants from around the North Plains learned about rainwater harvesting and built their own rain barrel at the North Plains Groundwater Conservation District's Spring Rainwater Harvesting Workshop. Nicholas Kenny, irrigation specialist for Texas AgriLife Extension Service, presented information on how to get started in rainwater harvesting and how to take the practice as far as you want to take it.

He discussed uses for harvested water ranging from supplemental landscape irrigation, to providing water for domestic uses, including drinking water. Kenny stressed that it is critically important to understand the public health and safety considerations and regulations involved when using harvested rainwater for drinking or other domestic uses. The following is a list of resources Kenny provided to help potential rainwater harvesters:

<http://rainwaterharvesting.tamu.edu/>

Kenny explained that .6 gallons of water can be obtained from every square foot of roof during a 1-inch rain. He presented a simple formula for determining how much water you might expect to harvest depending on the size of your catchment area:

$$V = R \times .623 \times A \times K$$

In the formula, "R" represents the amount of rain in inches, "A" represents the roof area in square feet, and "K" is the run-off coefficient for the various catchment surfaces. With a normal roof surface, and based on an annual rainfall of 17.5 inches per year, a homeowner of a 1500 square foot home could expect to harvest roughly 15,000 gallons annually.

$$V = 17.5 \times .623 \times 1500 \times .95 = 15,536$$

Kenny emphasized that it is always better to underestimate, especially if you are planning for a system that will provide water for critical needs.

- ◆ Harvesting, Storing, and Treating Rainwater for Domestic Indoor Use – Texas Commission on Environmental Quality (GI-366) [www.rainharvest.com/more/TexasRainwater.pdf](http://www.rainharvest.com/more/TexasRainwater.pdf)

- ◆ Drinking Water Standards – Texas AgriLife Extension Service Publication #B-6186

- ◆ Rainwater Harvesting - Texas AgriLife Extension Service Publication #B-6153

- ◆ Rainwater Harvesting: System Planning - Texas AgriLife Extension Service Publication #B-6240

- ◆ Texas Manual on Rainwater Harvesting – Texas Water Development Board 3rd Edition

### 2010 PRODUCTION BY COUNTY

COUNTY	Number of Properties	Property Acres	Production (Acre-Feet)	Average (Acre-Feet) per Acre	Average Acre-Inches per Acre
DALLAM	406	277,800	272,700	0.98	11.8
HANSFORD	358	197,000	128,700	0.65	7.8
HARTLEY	424	316,700	340,500	1.08	12.9
HUTCHINSON	98	67,100	40,300	0.60	7.2
LIPSCOMB	104	55,400	30,500	0.55	6.6
MOORE	343	165,200	163,100	0.99	11.8
OCHILTREE	224	112,100	60,500	0.54	6.5
SHERMAN	489	291,600	236,800	0.81	9.7
<b>Total</b>	<b>2446</b>	<b>1,482,900</b>	<b>1,273,100</b>	<b>0.86</b>	<b>10.3</b>



This 2,500-gallon metal rainwater harvesting tank collects rainwater from two downspouts off the Menard City Library in Menard. The water is used to irrigate the 50 plots of native plants common to that region, according to a Texas AgriLife Extension service water resources specialist. (Texas AgriLife Extension Service photo by Justin Mechell)



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## Salt Cedar Update

Invasive, non-native plants, like the salt cedar, consume large amounts of water along the Canadian River watershed. They colonize quickly, choking-out native plants and multiplying the water use. In 2008, the USDA Natural Resource Conservation Service estimated that invasive brush species in Texas consume 10-million acre feet of water annually, compared to 15 million acre feet consumed by humans.

The Salt Cedar is widely considered the most troublesome of the invasive brush varieties in the Panhandle area, though the Russian Olive and Eastern Red Cedar have also been targeted by eradication efforts. Individual Salt Cedar plants can absorb as much as 200 gallons of water per day, and with their tendency to colonize water ways, they are a major threat to the Canadian River watershed.

Since 2004, the Canadian River Municipal Water Authority (CRMWA) has sprayed almost 24,000 acres of Salt Cedar. "We have treated 98-99 percent of the most critical areas along the main Canadian River stem, so now we are concentrating on seed sources in the major tributaries," said Rod Goodwin, CRMWA Chief of Water Quality. According to Goodwin, landowners in the CRMWA watershed may be eligible for financial assistance from CRMWA. The CRMWA watershed includes the Canadian River and its tributaries from the dam at Ute Lake in Logan, New Mexico to Lake Meredith. "We are asking private landowners to cooperate in this effort by letting us know about Salt Cedar and other invasive species on their land," said Goodwin. "CRMWA will treat qualifying areas at no cost to the landowner." Landowners can contact CRMWA at 806-865-3325 for more information about project assistance.

There are also sources of funding for projects outside the Canadian River watershed. The NRCS Cooperative Conservation Partnership Initiative (CCPI) uses Environmental Quality

Incentive Program (EQIP) funds to offset 70-75 percent of the cost of eradication programs for invasive brush species, including Salt Cedar. The National Wild Turkey Federation and Texas Parks and Wildlife Department are also providing additional funds in Hutchinson, Roberts

and Hemphill counties. The combination of funds from these organizations can compensate landowners for most of the cost of ridding their property of these non-native, invasive species. For more information on the NRCS CCPI program contact your county NRCS field office.



*The Canadian River looking west from the Rail Bridge. The top of the picture shows dead Salt Cedar after treatment. Photo courtesy CRMWA.*

## North Plains Co-Sponsors Irrigation Meetings Across the District

Four meetings across the district will highlight three primary corn irrigation projects in the North Plains that are all sponsored in whole, or in part, by North Plains Groundwater Conservation District. The meetings are scheduled for August and are presented in cooperation

with Texas AgriLife Extension Service, Texas AgriLife Research and the North Plains Groundwater Conservation District.

The irrigation projects include the district's "200-12 Reduced Irrigation on Corn Demonstration" initiated by the district in 2010. The "200-12 Project" has received partial funding from the Texas Water Development Board for three years, beginning in 2011. The meetings will also feature information from the AgriLife Extension Service and Texas AgriLife Research corn irrigation projects being conducted in the North Plains and at the North Plains Research Field at Etter. The district provided

funding for both AgriLife projects.

"We believe these research and demonstration projects that help irrigators be more efficient with groundwater are absolutely in line with the mission of North Plains, and that's why we've put our money where our mouth is, so to speak by supporting these projects," said Steve Walthour, district general manager.

"These projects are the epitome of agricultural cooperation as both AgriLife Research and AgriLife Extension collaborate with the local groundwater district to address frontline, pressing needs in production agriculture," said Nich Kenny, AgriLife Extension

irrigation specialist.

All meetings will begin at 9 a.m. and are free. The dates and locations are:

◆ Aug. 19: Hutchinson County Corn Irrigation Conference, Morse Community Building, Morse.

◆ Aug. 24: Ochiltree Corn Irrigation Conference, Perryton Expo Center, Perryton.

◆ Aug. 25: Etter Corn Irrigation Field Day, Texas AgriLife Research's North Plains Research Field, Etter.

◆ Aug. 26: Dalhart Corn Irrigation Conference, Rita Blanca Coliseum, Dalhart.

Kay Ledbetter of Texas AgriLife Research contributed to this article.